

REMARKS

Claim objections

The identified deficiencies are believed corrected

Objections to the specification

Headings have been inserted

Claim rejections 35 USC §112

Claim 15 is rejected under §112 1st and second paragraphs as attempting to define a product entirely by its function. In the first instance, claim 15 is a dependent claim, incorporating by definition the features from its preceding claims. In addition, claim 15 is now amended to specify that the processing unit comprises a specific instruction set.

The rejection of claim 1 is moot, as claim 1 is cancelled.

Claim rejections 35 USC §101

New claims 22-26 and 27-29 are presented. The claims are believed to satisfy the “machine or transformation test”, and thus define patentable subject matter.

Claim 22 is tied to a particular machine or apparatus. The utilization of an imaging device having a specifically defined resolution capability, as well as a processing unit loaded with specifically defined software are included as features of the claim. These particular machines are not merely “insignificant, extra-solution activity” as the particular apparatus are integral to the functioning of the claimed method.

Claim 27 also includes the recitation of these particular machines, as well as reciting the transformative steps of sectioning the ingot and cutting silicon wafers from the ingot, as well as the adjustment of the manufacturing parameters of process equipment. According to claim 28, the parameters include the position in the ingot from which the wafer is cut, which describes the transformative act of cutting a wafer from a different location in an ingot based upon an input.

Claim rejections 35 USC §102

We respectfully disagree with the Examiners view of Hopper (US 6,140,140). It is referred to fig. 5 and col. 6, lines 1 – 65. In step 502, a first process is applied to a first part 420 of the wafer. In step 504, a second process is applied to a second part 422 of the wafer. The second process is similar, but different from the first process to determine the effects of varying a certain parameter associated with the first and second processes. Images of the first and second parts 420, 422 are then compared to each other by image subtraction (step 508).

In Hopper, it is therefore clear that the surface of the wafer is modified for the purpose of comparison.

This is clearly not the case for the present invention. One of the objects of the present invention is actually to avoid such surface modification for the purpose of comparison, as mentioned on page 2, lines 13 – 15.

It should be emphasised that in Hopper, there is no comparison of an image of a wafer (i.e. a sawed piece of an ingot section) with an image of a solar cell wafer (i.e. a wafer after modification by chemicals etc, as in steps 201 – 211 of fig. 2 of the present application).

In claim 11, it is described a system for producing solar cells. The system comprises an imaging device for providing images of wafers and of solar cells. A processing unit for comparing a wafer image to a cell image is provided. This is not known from Hopper – Hopper describes a comparison of two images taken from two different areas of the same wafer, where the two areas of the wafers have been exposed to different processes, not a

comparison of a finished solar cell with the original, unfinished wafer from which it was manufactured.

In the new claim 22, it is described a method for establishing correlation between wafers and solar cells produced from said wafers, where a wafer having a unique crystalline structure is provided in step a), and in step b) an image is captured of the wafer with an imaging device, said imaging device being arranged to render images of sufficient resolution to enable identification of the wafer's crystalline structure. This image is compared with an image captured of a solar cell manufactured from the wafer in step a). This is not known from Hopper – Hopper describes a comparison of two images taken from two different areas of the same wafer, where the two areas of the wafers have been exposed to different processes.

In the new claim 27, it is described a method for the production of solar cells where wafers having a unique crystalline structure is cut from an ingot. As described above, an image is captured of the wafer with an imaging device, said imaging device being arranged to render images of sufficient resolution to enable identification of the wafer's crystalline structure. This image is compared with an image captured of a solar cell manufactured from the wafer in step a). This is not known from Hopper – Hopper describes a comparison of two images taken from two different areas of the same wafer, where the two areas of the wafers have been exposed to different processes.